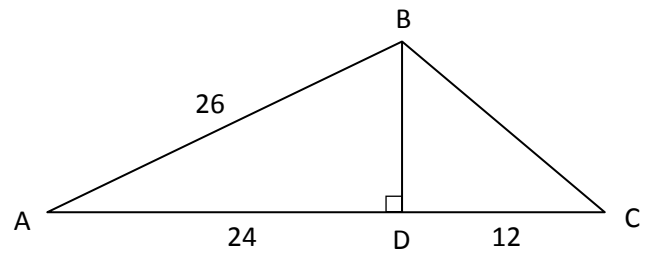


# Homework 6 – Pythagoras' Theorem and Brackets

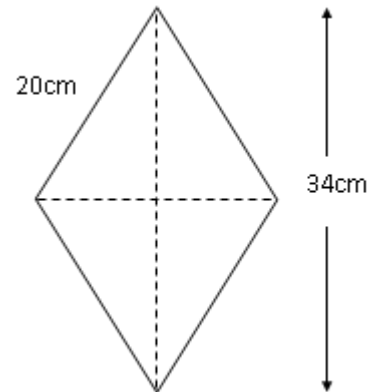
1. Consider the framework opposite.

- Calculate the length of BD.
- Hence calculate the length of BC.
- Calculate the area of triangle ABC.



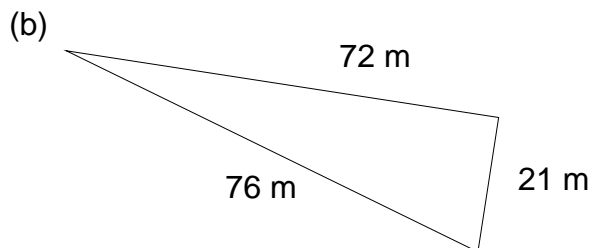
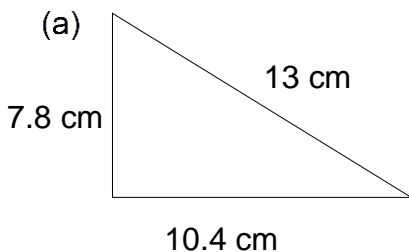
2. A rhombus has sides of 20cm and its longest diagonal measures 34cm, as shown in the diagram opposite.

- Calculate the length of the shorter diagonal.
- Calculate the area of the rhombus



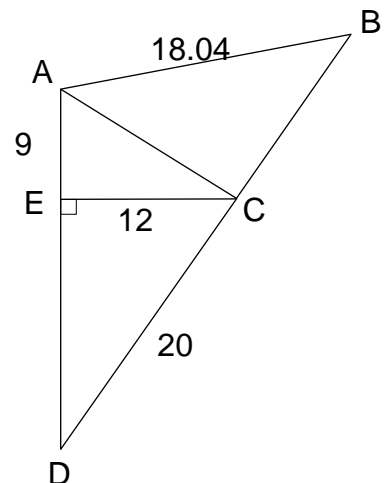
3. Calculate the distance between E(-2, 3) and F( 2 ,-4)

4. Which of the following triangles are right-angled?



5. Consider the diagram opposite. All lengths are centimetres.

- Calculate the length of AC.
- Calculate the length of ED.
- Prove that triangle ACD is right-angled at C.
- Hence calculate the length of BC and the area of triangle ABC correct to the nearest whole number.



6. Multiply out the brackets:

- $(y + 3)(y + 9)$
- $(t - 8)(t + 4)$
- $(u - 3)(u - 7)$

7. Multiply out the following brackets:

- $(h + 5)^2$
- $(3e - 8)(5e + 2)$
- $(x - 3)(x^2 - 5x + 8)$